

C.U.SHAH UNIVERSITY

Winter Examination-2018

Subject Name: Organic Chemistry-III

Subject Code: 4SC05OCH1

Branch: B.Sc. (Chemistry)

Semester: 5

Date: 30/11/2018

Time: 10:30 To 01:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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- Q-1 Attempt the following questions: (14)**
- Define: Reaction mechanism (1)
 - Introduce in short Homolytic fission or Symmetrical cleavage of bond. (1)
 - What are Anomers? (1)
 - Define: Electron withdrawing group (1)
 - What are carbohydrates? (1)
 - Draw the structure of aluminiumtri-isopropoxide. (1)
 - What is configurational relationship between D-glucose and D- mannose? (1)
 - Carbenes means? (1)
 - Define: Ylides (1)
 - Give only Ullmann reaction. (1)
 - What are carbanions? (1)
 - Define: Active methylene compounds (1)
 - Draw the structure of ethylacetoacetate. (1)
 - Which types of product will form in Ruff method? (In sense of No. of C.) (1)

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
- Discuss generation of carbocation and in short stability order. (7)
 - What are free radicals? How they are generated? Discuss their structure. (7)
- Q-3 Attempt all questions (14)**
- Discuss Skruap synthesis with its mechanism and its applications. (7)
 - Discuss Pinacol-Pinacolone rearrangement with mechanism and its application. (7)
- Q-4 Attempt all questions (14)**
- What are nitrenes? How they are generated? Give their structure. (6)
 - Give the order of stability of the following carbanions. Benzyl, phenyl, (5)



cyclopropyl, n-propyl, 1^o, 2^o, 3^o carbanions.

c) Give any three reactions of carbanions. (3)

Q-5 Attempt all questions (14)

a) What is oxidation? Give the oxidation reactions of monosaccharides by different reagents. (6)

b) Write the reactions of glucose and fructose with HCN, NH₂OH and also formation of Osazone. (5)

c) Discuss epimerization reaction of glucose. (3)

Q-6 Attempt all questions (14)

a) Give the synthesis of ethylacetoacetate with its mechanism. (5)

b) Write the synthesis of diethylmalonate and valeric acid. (5)

c) Explain acidic and ketonic hydrolysis with proper example. (4)

Q-7 Attempt all questions (14)

a) Discuss Steven rearrangement with mechanism and its applications. (7)

b) Discuss Knorr-pyrrole reaction with mechanism and its applications. (7)

Q-8 Attempt all questions (14)

a) Discuss configuration of monosaccharides with examples. (7)

b) Explain conversion of an aldose into next higher ketose. (4)

c) Convert D-Glucose to D-Fructose with reaction. (3)

